Hanwha Techwin is a global leading supplier of solutions for IP and analog video surveillance. Building on the company's history of innovation, Hanwha Techwin is dedicated to providing systems solutions with the highest levels of performance, reliability and cost-effectiveness. Hanwha Techwin is committed to the continued development of innovative systems products for professional security applications.

For additional information, visit <http://www.hanwha-security.com/>

**4 MP ANALOG IR BULLET CAMERA**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**Notes to Specifier:**

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>.**

2. Explanatory notes and comments are presented in **colored** text.

**Important: See further notes on the following page.**

**Important Note to Security Systems Specifiers**

CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. The following is a guide to the MasterFormat numbers relevant to the product referenced in this specification.

**Primary Specification Area:**

MasterFormat 2014:

28 20 00 Electronic Surveillance

28 23 00 Video Surveillance

 28 23 29 Video Surveillance Remote Devices and Sensors

MasterFormat 2016:

 28 20 00 Video Surveillance

 28 2x xx Surveillance Cameras

 28 2x xx Analog Cameras

**Related Requirements:**

MasterFormat 2014:

 27 20 00 Data Communications

 28 23 13 Video Surveillance Control and Management Systems

 28 23 16 Video Surveillance Monitoring and Supervisory Interfaces

 28 23 19 Digital Video Recorders and Analog Recording Devices

 28 23 23 Video Surveillance Systems Infrastructure

MasterFormat 2016

 27 15 01.xx Video Surveillance Communications Conductors and Cables

 27 20 00 Data Communications

 28 05 xx.xx PoE Power Sources for Electronic Safety and Security

 28 05 xx Storage Appliances for Electronic Safety and Security

 28 05 xx.xx Network Video Recorders

 28 05 xx Cyber Requirements for Electronic Safety and Security

 28 05 xx Safety and Security Network Communications Equipment

 28 2x 00 Video Management System

**4 MP ANALOG IR BULLET CAMERA**

1. **GENERAL**
	1. **SUMMARY**
		1. Section includes a 4 MP Analog video camera
		2. Product – Analog HD IR BULLET CAMERA

## Related Requirements

**Refer to MasterFormat notes at the beginning of this document to select requirements specific to the MasterFormat version being used in the specification.**

* 1. **REFERENCES**
		1. Abbreviations
			1. ACP AHD Coax Protocol
			2. AGC Auto Gain Control
			3. AHD Analog High Definition
			4. AWB Auto White Balance
			5. BLC Back light compensation
			6. CCP CVi Coax Protocol
			7. CVBS Composite Video Blanking and Sync
			8. DNR Digital Noise Reduction
			9. fps frames per second
			10. GUI Graphical User Interface
			11. HD High Definition
			12. IR Infrared
			13. JPEG Joint Photographic Experts Group
			14. LED Light Emitting Diode
			15. LDC Lens Distortion Correction
			16. LPR License Plate Recognition
			17. MJPEG Motion JPEG
			18. MP Megapixel
			19. MPEG Moving Pictures Experts Group
			20. SDK Software Development Kit
			21. SFP Small Form factor Pluggable
			22. SSDR Super Smart Dynamic Range
			23. SSNR Super Smart Noise Reduction
			24. SSL Secure Sockets Layer
			25. TCP TVi Coax Protocol
			26. VMS Video Management System
			27. WDR Wide Dynamic Range
		2. Reference Standards
			1. Emissions
				1. FCC-47 CFR Part 15 Subpart B ANSI C63.4-2014, Class A
				2. CE EN 55022:2010
				3. IC Regulation ICES-003:2016 CAN/CSA CISPR 22-10 Class A
				4. AS/NZS CISPR 32:2013 Class A
				5. VCCI V-3/2015.04 Class A
			2. Immunity - CE
				1. EN 55032:2012/AC:2013 Class A
				2. EN 50130-4:2011 +A1:2014
			3. Safety - UL listed
			4. Ingress Protection and Vandal Resistance
				1. ANSI / IEC60529 – Degrees of Protection Provided by Enclosures – IP66
				2. IEC EN 62262 - Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts : IK10
				3. IEC 60068-2-75 : IK10
	2. **SUBMITTALS**
		1. Product Data
			1. Manufacturer’s printed or electronic data sheets
			2. Manufacturer’s installation and operation manuals
			3. Warranty documentation
	3. **QUALIFICATIONS**
		1. Manufacturer shall have a minimum of five years’ experience in producing video equipment.
		2. Installers shall be trained and authorized by the Manufacturer to install, integrate, test, and commission the system.
	4. **DELIVERY, STORAGE AND HANDLING**
		1. Deliver the camera in the manufacturer’s original, unopened, undamaged container with identification labels intact.
		2. Store the camera in a temperature environment specified in section 2.03 Detailed Specification, protected from mechanical and environmental conditions as designated by the manufacturer.
	5. **WARRANTY, LICENSING AND SUPPORT**
		1. Manufacturer shall provide at least a limited 3 year warranty for the product to be free of defects in material and workmanship.
		2. Manufacturer shall provide embedded camera video analytics free of license charges.

END OF SECTION

1. **PRODUCTS**
	1. **EQUIPMENT**
		1. Manufacturer: Hanwha Techwin

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* + 1. Model HCO-7020RA
		2. Alternates: None
	1. **GENERAL DESCRIPTION**
		1. Video and Transmission – The camera shall have the following properties relating to the video signals it produces.
			1. 4 MP resolution, 30fps @ 4M(N), 25fps @ 4M(P)
			2. Video signals are output in AHD/CVBS(selectable) format via BNC terminal.
			3. Video shall be able to be transmitted up to 500 meters with 5c2v cable.
		2. Camera – The camera device shall have the following physical and performance properties:
			1. True day/night operation with removable IR cut filter
				1. Low light level operation to 0.27 lux at F2.0, 1/30sec in color mode and 0 lux in black and white mode with IR LED on.
			2. The camera shall be able to produce clear images in highly contrast scenes with digital wide dynamic range.
			3. The camera shall support digital noise reduction using 2D DNR technology.
			4. The camera shall be able to configure 2 privacy masking areas with rectangles.
		3. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
			1. Motion detection with 4 definable detection areas.
		4. The camera shall be controlled by ACP or Coaxitron.
	2. **DETAILED SPECIFICATIONS**
		1. Video
			1. Imaging device 1/3" 4MP CMOS
			2. Image Pixels Total: 2,720(H) x 1,536(V), Effective: 2,688(H) x 1,520(V)
			3. Scanning Progressive
			4. Resolution 2,560x1,440
			5. Minimum Illumination Color: 0.27Lux (F2.0, 1/30sec), B/W: 0 Lux (IR LED on)
			6. S/N Ratio 52dB (AGC off, Weight on)
		2. Lens:
			1. Focal length 4.0mm fixed
			2. Max. Aperture Ratio F2.0
			3. Field of View H: 78.22˚, V: 41.21°, D: 87.91°
			4. Min. Object Distance 0.5m(1.64ft)
			5. Lens Type Fixed
			6. Focus Control N/A
			7. Mount Type Board-in Type
		3. Operational Functions
			1. IR Viewable Length 25m (82.02ft)
			2. On Screen Display English, Spanish, French, Portuguese, German, Italian, Russian,

Polish, Czech, Romanian, Serbian, Swedish, Danish, Turkish

* + - 1. Day/Night Setting Auto (ICR) / Color / B/W
			2. Backlight Compensation Off / User BLC / HLC
			3. WDR D-WDR (Off/On)
			4. Digital Noise Reduction 2D DNR
			5. Motion Detection Off / On (4 zones)
			6. Privacy Masking Off / On (2 zones, rectangular)
			7. Gain Control Off / Low / Middle / High / Very High
			8. White Balance ATW / Outdoor / Indoor(4,500K° ~ 8,500K°) / Manual

/ AWC (1,800K° ~ 10,500K°)

* + - 1. Electronic Shutter Speed 1/30 sec ~ 1/12,000 sec(N), 1/25sec~ 1/12,000sec(P)
			2. Reverse Off / H-Rev /V-Rev
			3. Remote Control Interface Coaxial
			4. Protocol AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)
			5. Video Transmission Distance 500 m (5c2v)
		1. Electrical
			1. Input Voltage 12V DC ±10%/410mA
			2. Power Consumption 5 W
		2. Mechanical
			1. Color/Material Dark Gray / Aluminum
			2. Dimensions (W x H) Ø70.0 x 246 mm(Ø2.756 x 9.685 inch)(Without sunshield)
			3. Weight 670g (1.477 lb)
		3. Environmental
			1. Operating Temperature -30°C ~ +55°C (-22°F ~ +131°F) \*start up : more than - 10°C
			2. Operating Humidity Less than 90% RH
			3. Ingression Protection IP66
			4. Vandal Resistance IK10

END OF SECTION

1. **EXECUTION**
	1. **INSTALLERS**
		1. Contractor personnel shall comply with all applicable state and local licensing requirements.
	2. **PREPARATION**
		1. The design and configuration shall be verified for compatibility and performance with the camera(s).
		2. Configuration shall be tested and qualified by the Contractor prior to camera installation.
		3. All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the provider of the Video Management Application (VMA) or Digital Video Recorder (DVR).
	3. **INSTALLATION**
		1. The Contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.
		2. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
		3. Before permanent installation of the system, the Contractor shall test the system in conditions simulating the final installed environment.
	4. **STORAGE**
		1. The camera hardware shall be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

END OF SECTION